In the claims:

1. (Currently Amended) A method for maintaining cache coherence in a multiprocessor system having a plurality of nodes ~~coupled by an interconnecting communications pathway which is capable of storing information regarding the location and state of data within the system~~, each node having at least one cache, a memory device local to the node, and at least one processor device, ~~the processor device within each node being capable of accessing data from the local memory device, the local cache, or over the interconnecting communications pathway from a non local memory device or a non local cache,~~ the method comprising:

storing information regarding the state of data in ~~said interconnecting pathway~~ an interconnect communicatively connecting said nodes with one another;

checking said stored information to determine the location of the most current copy of a requested portion of data, in response to a request by a requesting node for the requested portion of data;

retrieving said current copy of requested portion of data and directing said data to the requesting node; checking said stored information to determine the location of the requested data; and

directing the system to send said requested data to the requesting node without going through ~~the said interconnecting communications pathway~~ said interconnect.

2. (Currently Amended) A multiprocessor computer system comprising:

a plurality of nodes, each node including at least one processor and portion of a shared distributed system memory coupled to said processor; and

~~a communication pathway~~ an interconnect both communicatively connecting said nodes with one another and ~~including a central hardware device which stores~~ storing location and state information of data stored in the memory of the nodes.

3. (Currently Amended) The multiprocessor system of claim 2, wherein each node includes memory accessible to it without communications through said ~~communications pathway~~ interconnect, and memory accessible remotely by others of the nodes.

B1

4. (Currently Amended) The multiprocessor system of claim 2 wherein further said ~~central hardware device~~ interconnect stores information for determining which nodes or processors are storing copies of one or more identified data in each said node's memory.

5. (Currently Amended) The multiprocessor system of claim 2 wherein said ~~central hardware device~~ interconnect compares requested data with the stored location and the state of data in the nodes, directs requested data to the requesting node, and sends requests for additional data to other nodes for which said device stores the location of data.

6. (Currently Amended) The multiprocessor system of claim 5 wherein said ~~central hardware device~~ interconnect includes a dispatch buffer operatively connected to the nodes, and issues requests for information related to the state of identified data to other nodes simultaneously with the communication of data to a target node.

7. (Currently Amended) The multiprocessor system of claim 5 wherein said ~~interconnecting communications pathway~~ interconnect includes a first pathway storing the location and state of data in the nodes, and a second pathway communicating the data requested by said target node.

8. (Currently Amended) A method for maintaining cache coherence in a multiprocessor system having a plurality of nodes ~~coupled by an interconnecting communications pathway which~~

~~is capable of storing information regarding the location and state of data within the system~~, each node having at least one cache, a memory device local to the node and at least one processor device, the memory and processor device being coupled to form a complete subsystem, ~~the processor device within each node being capable of accessing data from the local memory device, the local cache, or over the interconnecting communications pathway from a non local memory device, or a non local cache, wherein further said communications pathway is comprised of a first pathway which communicates the state and location of data within the nodes, and a second communications pathway which communicates the data between the nodes,~~ the method comprising:

storing information regarding the state of data in ~~said first pathway~~ a first part of an interconnect communicatively connecting said nodes with one another;

said first ~~pathway~~ part checking said stored information to determine the location of the most current copy of a requested portion of data, in response to a request by a requesting node for data;

said first ~~pathway~~ part directing ~~said second pathway~~ a second part of the interconnect to forward the said most current copy of said data to the requesting node; and

said second ~~pathway~~ part retrieving said current copy of requested portion of data and directing said data to a target node.

9. (Currently Amended) The method of claim 8 wherein ~~said step of~~ said first ~~pathway~~ part checking said stored information to determine the location of the most current copy of a requested portion of data, in response to a request by a requesting node for data, comprises:

storing information about the state of data in each node in said first communications pathway;

checking the state of requested data stored in each node upon request for the data from a node by reading the said stored information and determining the desired state defined as the most

B1

current copy of said stored data.